



UNITED STATES PATENT AND TRADEMARK OFFICE

HA

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/680,886

10/08/2003

Hiroyuki Tanaka

693.007

6440

23598

7590

08/08/2006

BOYLE FREDRICKSON NEWHOLM STEIN & GRATZ, S.C.
250 E. WISCONSIN AVENUE
SUITE 1030
MILWAUKEE, WI 53202

EXAMINER

WONG, ERIC K

ART UNIT

PAPER NUMBER

2883

DATE MAILED: 08/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/680,886

Applicant(s)

TANAKA ET AL.

Examiner

Eric Wong

Art Unit

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 5/30/06 have been fully considered but they are not persuasive. Applicant argues that the prior art of Duck fails to disclose a light of wavelength launched out of an input side and returning to said input side as required by amended claims 1 and 7. Examiner respectfully disagrees. Amended claim 1 recites that the first optical fiber receives **or** outputs wavelength light. The first fiber of Duck receives **or** outputs light and appears to meet the limitation as claimed.
2. Applicant further argues that the prior art of Duck fails to disclose a mirror. Examiner respectfully disagrees. Duck discloses that reflective surface (16) can comprise a mirror. (Also see Duck claim #5).
3. Applicant argues that the Tomlinson art fails to disclose a mirror and a filter. Examiner's citation of Tomlinson is directed towards the structure of multiple fibers and enabling one of ordinary skill in the art to use three fibers as opposed to the two disclosed by Duck. Examiner believes that the lack of a mirror and filter is a moot point with this respect.
4. Applicant argues that the art of Mizuno fails to disclose a mirror and three optical fibers supported by a capillary. Examiner's citation of Mizuno is directed towards the structure of multiple fibers supported in a tube having a triangular shape and enabling one of ordinary skill in the art to use this shape. Examiner believes that the lack of a mirror is a moot point with this respect.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 5, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Number 5,799,121 to Duck et al (hereinafter Duck), and further in view of United States Patent Number 4,111,524 to Tomlinson III (hereinafter Tomlinson).

Duck discloses in figure 3, a filter module comprising:

- A lens (14) through which an optical signal passes;
- Optical fibers (10, 12);
- An optical filter (37) that transmits the optical signal in a particular wavelength band (see λ 1-4) among a wavelength multiplex optical signal and to reflect a wavelength band, and
- A total reflection mirror (16) arranged reflect an optical signal transmitted to the filter,
- wherein said optical fibers are arranged on a single side of said lens, wherein the first optical fiber receives or outputs the wavelength multiplex optical signal from/to the lens, wherein the second optical fiber receives or outputs the signal reflected by the filter.

As to claim 6, the filter is a wavelength selective filter (column 3, line 6) and is substantially collimated (column 2, line 41).

However, Duck fails to explicitly disclose the use of three optical fibers, but does disclose the ability to use multiple fibers and multiple ports. Furthermore, Duck takes into consideration space savings

Tomlinson discloses in figure 2, an optical filter module with three optical fibers in a capillary (14) and a lens configured on one side of a reflective surface in order to multiplex light signals.

Since Duck and Tomlinson are both from the same field of endeavor, the use of three fibers as disclosed by Tomlinson would have been recognized in the pertinent art of Duck.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use three optical fibers on one side of a reflective surface as disclosed by Tomlinson in the filter module of Duck for the motivation of increasing bandwidth and saving space.

7. Claims 7-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duck in view of Tomlinson (hereinafter DIT) as applied to claims above, and further in view of Applicant's disclosure of prior art.

DIT discloses an optical filter module as claimed, but fails to explicitly disclose multiple filter modules arranged together in a cascade formation. Examiner notes that DIT does not specifically limit the device to ONE module, and by merely providing for another module is commonly known in the art.

Applicant discloses in figure 9, such a cascade formation.

Art Unit: 2883

It would have been obvious to one having ordinary skill in the art at the time the invention was made to arrange the module as disclosed by DIT in the cascade formation as disclosed by Applicant in order to increase bandwidth for a WDM system.

8. Claims 4, 10, 14-16, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over DIT as applied to claims above, and further in view of United States Patent Number 6,499,886 to Mizuno et al.

DIT discloses the filter module as claimed except for a capillary tube having 3 walls connected to each other. It is noted that it is commonly known in the art to select a known shape to support optical fibers for the purposes of limiting movement. Naturally, a triangle shape with three walls would best suit the configuration of three fibers.

Mizuno et al. discloses a capillary tube having three walls holding three optical fibers shaped in a triangle.

Since DIT and Mizuno et al. are both from the same field of endeavor, the use of a capillary tube as disclosed by Mizuno et al. would have been recognized in the pertinent art of DIT.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the three walled triangle configuration disclosed by Mizuno et al. in the holding tube of DIT, for the purpose and motivation of further securing optical fibers in order to reduce movement and optical losses resulting therefrom.

Conclusion

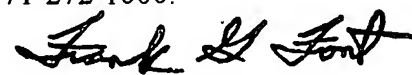
9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Wong whose telephone number is 571-272-2363. The examiner can normally be reached on Monday through Friday, 830AM - 430PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Frank G. Font
Supervisory Patent Examiner
Technology Center 2800